159 Rheumatic Pain

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Definition

Rheumatic symptoms (or rheumatism) are distinguished by the following seven characteristics: (1) pain or discomfort, usually perceived in the vicinity of one or more joints (including the spine); (2) pain on motion of the affected area(s); (3) soreness (to the touch) of the affected region(s); (4) stiffness of the affected part(s), especially after a period of immobility; (5) symptomatic improvement after *mild* exercise, but worsening after *vigorous* exercise; (6) symptomatic worsening in response to climatic factors, especially falling barometric pressure and rising humidity; and (7) symptomatic improvement in response to warming the affected area(s). Not all rheumatic pain syndromes have all seven characteristics, but most will at least have the first four.

Technique

A history of rheumatism is the foundation for all rheumatic disease histories; it will at least classify the symptom complex and, fully explored, may lead to a precise diagnosis. The basic rheumatic history does not differ fundamentally from other medical histories, and it can be approached according to the seven dimensions of a symptom outlined by Morgan and Engel (1969).

Localization of the Pain

Rheumatic pain is almost always localized (see Tables 159.1 and 159.2 for specific syndromes). It may be localized to one region of the body (e.g., one shoulder girdle) or to a single structure at multiple sites (e.g., the peripheral joints). From the viewpoint of specific diagnosis, the most important aspect of the musculoskeletal history is the process of localizing the symptoms. This is best done by asking the patient to "show me *exactly* where it hurts." When an unusually large or ill-defined area is indicated by the patient, it is helpful to inquire, "Where does the pain seem to center?" At times the physician might help the hesitant patient by lightly palpating the region in question. Once the symptoms are adequately localized, patterns of radiation should be determined. Be certain that *all* areas of discomfort have been reported.

Factors That Aggravate or Alleviate the Pain

From the viewpoint of classification (as rheumatism), the most important dimension of the rheumatic disease history concerns the factors that aggravate or alleviate the symptoms. The influences of motion and immobility of and across the affected parts should be explored. Gentle motion of the affected part would be expected to increase its discomfort during the motion, but it might result in symptomatic improvement after the motion had ceased; more vigorous exercise should worsen the pain both during and after the activity. Long periods of immobility, especially during sleep, typically result in the symptom of stiffness, a term readily understood by most patients with a rheumatic pain syndrome. In fact, if the patient seems not to understand the question "Are you stiff in the morning?" it is probably not worth pursuing this line of questioning. Approach the influence of climatic factors with an open-ended question, such as, "Are you sensitive to changes in weather?" Specifics can then be determined. Most patients with a chronic rheumatic pain syndrome have learned that heat is helpful, and will readily respond to a question concerning the influence of local heat applications. "Do you feel better after a hot bath?" might be asked of those who have not intentionally applied heat to the painful region. Responses to drug and other therapies should also be determined during this part of the interview, which might be terminated by an open-ended question concerning any other maneuvers that the patient has noted to influence the symptoms.

Quality of the Pain

The quality of rheumatic pain is typically a deep aching sensation, but the word "soreness" is also used, perhaps to emphasize the pain on motion and tenderness to touch. The question "What does the pain feel like?" will usually suffice to cover this dimension, but soreness to the touch should be asked about if it is not volunteered by the patient.

Quantity of the Pain

The quantity or severity of rheumatic pain varies widely from patient to patient and from time to time in any one patient. Except under extremely aggravating circumstances, it is generally less severe than ischemic, neuropathic, or visceral pain. Unexplained fluctuations over days, weeks, or months are typical of rheumatic pain, and the patient should be asked about this pattern of changing severity. Patients with frequent fluctuations in severity have difficulty with the concepts of overall improvement and overall worsening. It is often helpful to ask them to think in terms of average severity over the period of a month or so: "Compared to, say, December, how bad was the pain during June?" A major indicator of the severity of a rheumatic syndrome is its disability. Physical, social, and occupational restrictions imposed by the problem should be explored in detail.

Table 159.1
Rheumatic Pain Syndromes

Syndrome	Structure(s) involved	Causes	Pathogenesis	Distinctive clinical features	Most common sites
Arthralgia-arthritis	Joint	Synovitis or cartilage degeneration from any cause	Pain most often reflects synovial inflammation, even in osteoarthritis	Pain in joint. Tenderness localizes to area around joint where capsule is accessible to surface. Swelling in same area with more advanced disease	Depends on cause
Bursitis	Bursa	"Wear and tear" usually. Less often gout, infection, and other generalized joint diseases	Bursae are synovial tissues; they respond to irritants as does joint synovium. Inflammation usually present	Tenderness localizes to *site* of bursa. Swelling of superficial bursae	Trochanteric, ischial, anserine, olecranon, and prepatellar
Tendinitis–tenosynovitis	Tendon, tendon sheath	"Wear and tear" for flat (unsheathed) tendons. "Wear and tear" plus gout, infection, rheumatoid arthritis, etc., for sheathed tendons	Fraying, ischemia, calcification in flat tendons. Inflammation in the *synovial* tendon sheaths of round ones	For flat tendons, tenderness localizes to the *site* of the tendon. For round tendons, swelling and/or localized tenderness. Contraction of the tendon's muscle refers pain to site of inflammation	Rotator cuff (supraspinatus) of shoulder, long head of biceps, and hand extensor tendons
Enthesopathy	Enthesis (point of attachment of tendon or tendon-like structure into bone)	Multiple: most common is muscle contraction tearing enthesis or causing ischemia; degeneration with age; inflammation with certain diseases causing enthesitis	Complex structure with interlinked tendon fibers continuous with Sharpey's fibers. Stress tears fibers; sustained muscle contraction causes enthesis ischemia	Tenderness localizes directly to enthesis. Isometric contraction of its muscle refers pain directly to enthesis	Elbow-lateral (tennis) and medial epicondyle, plantar and posterior surface of calcaneum, superior portion of greater trochanter
Myalgia–myositis	Muscle	Limited number of infections, metabolic and inflammatory disorders. Overuse and trauma	Diffuse infection or vasculitis; massive necrosis; sustained ischemia; blunt trauma; less often, diffuse muscle inflammation	*Diffuse* muscle tenderness—not limited to or exaggerated near its attachment areas. *Diffuse* muscle pain	Generally more proximal
Myofascial pain syndrome	Not known; probably muscle or enthesis	Unclear; seen with trauma, sustained muscle contraction, adjacent arthritis, neuropathies, and for no apparent reason	Not known; pathology never identified	Widespread area of pain around a predictable small "trigger point." Stimulation of "trigger" causes pain in its region. Anesthesia of "trigger point" relieves the pain in its region	Upper medial border of trapezius; C7 spine area; medial scapular border; L4–5 interspinous region; presacral areas; second costochondral junctions

Chronology of the Symptoms

The chronology of a rheumatic pain syndrome often helps to suggest a precise diagnosis; however, rheumatic pain in general may begin insidiously or abruptly and persist for only a few days or indefinitely. With definitive diagnosis in mind, the time and nature of onset and subsequent overall disease behavior should be determined. Change in location or character of symptoms with time should be noted. Major medical interventions might be detailed during this aspect of the interview.

Clinical Setting

The setting in which a rheumatic pain syndrome develops may also point toward a specific diagnosis. The age and sex of the patient are especially important. The spondyloar-

Table 159.2
An Abbreviated Classification of Arthritis

Degenerative joint diseases (osteoarthritis)
Connective tissue diseases
Rheumatoid arthritis
Systemic lupus erythematosus
Systemic sclerosis
Polymyositis/dermatomyositis
Sjögren's syndrome
Spondyloarthropathies
Ankylosing spondylitis
Reiter's syndrome
Psoriatic arthritis
Crystalline-induced arthropathies
Gout
Chondrocalcinosis (pseudogout)
Infectious arthritis
Bacterial
Fungal
Viral
Postinfectious arthropathies (acute rheumatic fever and others)
Juvenile arthritis of unknown etiology
Arthritis associated with other systemic diseases

thropathies tend to occur in young men, systemic lupus erythematosus occurs in young women, and rheumatoid arthritis tends to begin in middle-aged women. The interviewer should develop a clear picture of the patient's physical activities antedating the onset of symptoms, and patterns that might be considered unusual should be fully explored. Antecedent musculoskeletal trauma should not be overlooked.

Associated Clinical Manifestations

The final dimension of the rheumatic pain symptom complex is its associated manifestations. These are characteristically absent when the problem is regional, but characteristically protean for many of the diseases associated with polyarthralgia. For the latter group of disorders, some of the most common and important associated manifestations are listed in Table 159.3. For all patients with rheumatic symptoms, however, open-ended questions should address this dimension. "Would you feel well or normal if the pain and stiffness would go away?" is useful for this purpose.

Basic Science

Causes of the rheumatic pain syndromes are listed in Table 159.1. They are diverse in nature, but most of the nonarticular disorders seem to be induced by "wear and tear" or sustained use of the part in question. Few scientific studies have inquired into the origins of tendinitis, bursitis, enthesopathies, and myofascial pain, but most clinical observations suggest an important role for repetitive motion or sustained muscle contraction. Repetitive motion can fray a tendon as it moves over a bony prominence and can produce sufficient damage to result in an inflammatory focus. Bursae, which occur at sites of friction, may be irritated in a similar fashion. Sustained muscle contraction may result in ischemic foci in a muscle belly or near its attachment, resulting in tender areas called *myofascial trigger points*. A number of observations suggest that inflammation of an enthesis can result from local ischemia due to sustained contraction of its muscle. Rheumatic pain syndromes can be induced or precipitated by certain patterns of musculoskeletal usage.

Table 159.3
Selected Symptomatic Extraarticular Features of the Connective Tissue Diseases and the Spondyloarthropathies

Rheumatoid arthritis
Subcutaneous nodules
Peripheral neuropathies
Cutaneous vasculitis
Pleuritis-pericarditis
Pulmonary fibrosis
Scleritis-episcleritis
Sjögren's syndrome
Systemic lupus erythematosus
Fever
Rashes
Photosensitivity
Oral and nasal ulcers
Alopecia
Raynaud's phenomenon
Pleuritis-pericarditis
Symptomatic anemia-thrombocytopenia
Nephrotic syndrome
Seizures
Psychoses
Systemic sclerosis (scleroderma)
Skin tightness
Raynaud's phenomenon
Esophageal dysfunction
Pulmonary fibrosis
Cutaneous calcinosis
Polymyositis/dermatomyositis
Muscle weakness
Rashes
Pulmonary fibrosis
Sjøgren's syndrome
Dry (irritated) eyes
Dry mouth
Accelerated dental caries
Dyspareunia
Ankylosing spondylitis
Iritis
Enthesopathies
Reiter's syndrome
Fever
Urethritis
Conjunctivitis
Heel enthesopathies
Keratoderma blennorrhagicum
Balanitis circinata
Onycholysis
Psoriatic arthritis
Cutaneous and nail psoriasis
Heel enthesopathies

The pathogenesis of each of the rheumatic pain syndromes is addressed briefly in Table 159.1. There is no scientific evidence to associate myofascial pain with an inflammatory response; otherwise an acute or chronic inflammatory process plays an important pathogenetic role in the remainder. Inflammation, whether initiated by known or unknown causes, is the primary event in all the arthropathies except osteoarthritis. Even in osteoarthritis there is a secondary inflammatory process that is important in the production of many of its symptoms. Especially in the case of inflamed synovial structures (joints, bursae, and tendon sheaths), the patient is likely to be aware of the inflammatory process. Consequently, it may be possible to obtain a history of local swelling, warmth and redness, as well as pain and tenderness.

Clinical Significance

The clinical significance of rheumatism traverses a spectrum from trivial or expected discomfort to serious, disabling, and life-threatening disease. Most patients who seek medical attention for local or regional nonarticular rheumatic symptoms have a benign and self-limited disorder, whereas a significant number, perhaps the majority, who see a physician for generalized joint symptoms have a potentially serious and disabling disease.

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